

AMENDMENT TO THE SPECIFICATION

On page 1, lines 1 and 2, amend the title as follows:

DELAY SENSITIVE ~~ADAPATION~~ ADAPTIVE QUALITY CONTROL LOOP FOR RATE
ADAPTATION

2/6/05
This title is
correct. No
change is
required. *MS*

On page 1, in the section entitled related application, replace the paragraph beginning at line ~~15~~ 5
with the following:

Related subject matter is disclosed in the following applications filed concurrently
and assigned to the same assignee hereof: U.S. Patent Application Serial No. 10033339 entitled,
"ADAPTIVE QUALITY CONTROL LOOP FOR LINK RATE ADAPTATION IN DATA
PACKET COMMUNICATION," inventors Sridhar Gollamudi and Pantelis Monogioudis; and U.S.
Patent Application Serial No. 10033338 entitled, "MULTI-CHANNEL ADAPTIVE QUALITY
CONTROL LOOP FOR LINK RATE ADAPTATION IN DATA PACKET COMMUNICATION,"
inventors Sridhar Gollamudi and Pantelis Monogioudis.

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On page 4, line 2, replace the section identifier as follows:

DETAILED ~~DETAILED~~ DESCRIPTION

On pages 10 and 11, replace the paragraph beginning at line 23 of page 10 with the following:

In one embodiment where the data packet being transmitted is delay sensitive, such
as video, the channel condition threshold $\theta(m)$ (and, if applicable, other channel condition
thresholds $\theta(n)$) is adjusted whenever a CRC result, such as a success or failure indicator, is
available. The available CRC result determines whether the channel condition threshold $\theta(m)$ is
adjusted up or down. For example, if the available (or latest) CRC result indicates data packet
transmission error, then the channel condition threshold $\theta(m)$ is adjusted a down step. By adjusting
the channel condition threshold $\theta(m)$ whenever a CRC result is available, the amount of delay is
reduced, particularly when the data packet transmission failed. For example, suppose the estimate
of channel condition is C1. MCS level 2 is selected as the MCS level to be used in data packet
transmissions based on this channel condition C1. The data packet transmission fails. The
transmitter will attempt to re-transmit the same data packet based on the latest estimate of channel
condition, which is C2. In this example, channel condition C2 is approximately the same or worst

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than channel condition C1. If the channel condition threshold $\theta(m)$ was not adjusted an up step (because the original data packet transmission failed) prior to selecting an MCS level for the re-transmission of the data packet, the same MCS level 2 would be selected for the re-transmission. Such re-transmission using MCS level 2 under the channel condition C2 is likely to fail because it also failed under channel condition C1. By contrast, suppose the channel condition threshold $\theta(m)$ was adjusted an up step prior to selecting the MCS level for the re-transmission of the data packet, and the adjusted channel condition threshold $\theta(m)$ would no longer be satisfied by the channel condition C2. In this situation, a lower or stronger MCS level, i.e., MCS level 1, would be selected for the re-transmission of the data packet. The re-transmission using a stronger MCS level 1 is more likely to succeed than the re-transmission using MCS level 2 under the same channel condition C2, thereby reducing the amount of delay associated with a failed re-transmission attempt using MCS level 2.

On page 11, replace the paragraph beginning at line 14 with the following:

In another embodiment where the data packet being transmitted is not delay sensitive, such as a text message, the channel condition threshold $\theta(m)$ (and, if applicable, other channel condition thresholds $\theta(n)$) is adjusted after completion of any and all transmissions, including re-transmissions, of the data packet. Transmission of a data packet is deemed completed when a good CRC result is received or the number of re-transmissions is equal to the maximum number of allowable re-transmissions. The last CRC result associated with the data packet transmission may be used to determine whether the channel condition threshold $\theta(m)$ is adjusted up or down. Alternately, an average of the CRC results associated with all transmissions of the data packet are used to determine whether channel condition threshold $\theta(m)$ is adjusted up or down. For example, suppose three CRC results for a data packet transmission indicate there were two failed transmissions and one successful ~~transmissions~~ transmission. The average CRC result would indicate that the transmission of the data packet failed more often than it succeeded for the MCS level of the data packet transmission. Accordingly, the channel condition threshold $\theta(m)$ is adjusted an up step. In another example, two CRC results indicate one failed transmission and one successful transmission. The average CRC result would indicate neither success or failure were likely or unlikely for that MCS level. Based on the average CRC result, the channel condition threshold $\theta(m)$ may not be adjusted or adjusted using an up step or a down step depending on preferences established, for example, by a service provider.

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JPL